

# Yumin Suh

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I am a senior researcher at NEC Laboratories America. My current research focuses on large vision-language model and visual representation that interacts with language.

## Work Experience

**NEC Laboratories America** | [Media Analytics department](#) **June 2024 – Present**  
San Jose, CA  
*Senior Researcher*

- Develop generative Large Vision-Language Models that take images/videos along with text as input and produce language outputs

**NEC Laboratories America** | [Media Analytics department](#) **December 2019 – May 2024**  
San Jose, CA  
*Researcher*

- Developed a domain-specific generative Large Vision-Language Model for human analysis
- Developed a unified model that performs multiple tasks for rich human analysis

**Microsoft Research Asia** **September 2016 – June 2017**  
*Research Intern* *Mentors: Jingdong Wang, Tao Mei*

- Proposed a visual representation for person re-identification ([Publication](#) cited 600+ times)

**Inria** | *WILLOW team* **December 2014 – May 2015**  
*Research Intern* *Mentors: Minsu Cho, Jean Ponce*

## Education

**Seoul National University** **Apr. 2019 – Nov. 2019**  
*Postdoc* *Advisors: Bohyung Han, Kyoung Mu Lee*

**Seoul National University** **Mar. 2014 – Feb 2019**  
*Ph.D., Electrical and Computer Engineering* *Advisor: Kyoung Mu Lee*

**Seoul National University** **Mar. 2011 – Feb. 2013**  
*M.S., Electrical Engineering and Computer Science* *Advisor: Kyoung Mu Lee*

**Seoul National University** **Mar. 2007 – Feb. 2011**  
*B.S., Electrical Engineering*

## Workshop Organization

**2nd OmniLabel workshop at ECCV 2024** [[Workshop](#)][[Benchmark](#)][[Challenge](#)]

Organizers: Vijay Kumar B G, [Yumin Suh](#), Samuel Schuster, Shiyu Zhao, Long Zhao, Dimitris N. Metaxas

**1st OmniLabel workshop at CVPR 2023** [[Workshop](#)][[Benchmark](#)][[Challenge](#)]

Organizers: Samuel Schuster, Vijay Kumar B G, [Yumin Suh](#), Golnaz Ghiasi, Long Zhao, Qi Yu, Dimitris N. Metaxas

- Workshop to promote research on **language-based vision perception** system beyond simple category names
- New [benchmark](#) for language-based object detection

## Papers

**Improving the Efficiency-Accuracy Tradeoff of DETR-Style Models in Practice**

[Yumin Suh](#), Dongwan Kim, Abhishek Aich, Samuel Schuster, Jong-Chyi Su, Bohyung Han, Manmohan Chandraker

[ECV Workshop at CVPR 2024](#)

**Generating Enhanced Negatives for Training Language-Based Object Detectors**

Shiyu Zhao, Long Zhao, Vijay Kumar BG, [Yumin Suh](#), Dimitris N. Metaxas, Manmohan Chandraker, Samuel Schuster

CVPR 2024

**Taming Self-Training for Open-Vocabulary Object Detection**

Shiyu Zhao, Samuel Schuster, Long Zhao, Zhixing Zhang, Vijay Kumar BG, [Yumin Suh](#), Manmohan Chandraker, Dimitris N. Metaxas

CVPR 2024

**Efficient Controllable Multi-Task Architectures**

Abhishek Aich, Samuel Schuster, Amit K. Roy-Chowdhury, Manmohan Chandraker, [Yumin Suh](#)

ICCV 2023

<b>OmniLabel: A Challenging Benchmark for Language-Based Object Detection</b> Samuel Schuster, Vijay Kumar B G, <a href="#">Yumin Suh</a> , Konstantinos M. Dafnis*, Zhixing Zhang*, Shiyu Zhao*, Dimitris Metaxas (* equal technical contribution, alphabetic order)	<b>ICCV 2023 (Oral)</b>
• New <i>dataset and benchmark</i> for <i>language-based detection</i> . Hosted the Omnilabel workshop in CVPR 2023	
<b>Confidence and Dispersity Speak: Characterizing Prediction Matrix for Unsupervised Accuracy Estimation</b> Weijian Deng, <a href="#">Yumin Suh</a> , Stephen Gould, Liang Zheng	<b>ICML 2023</b>
<b>Split to Learn: Gradient Split for Multi-Task Human Image Analysis</b> Weijian Deng, <a href="#">Yumin Suh</a> , Xiang Yu, Masoud Faraki, Liang Zheng, Manmohan Chandraker	<b>WACV 2023</b>
<b>Learning Semantic Segmentation from Multiple Datasets with Label Shifts</b> Dongwan Kim, Yi-Hsuan Tsai, <a href="#">Yumin Suh</a> , Masoud Faraki, Sparsh Garg, Manmohan Chandraker, Bohyung Han	<b>ECCV 2022</b>
<b>Controllable Dynamic Multi-Task Architectures</b> Dripta S. Raychaudhuri, <a href="#">Yumin Suh</a> , Samuel Schuster, Xiang Yu, Masoud Faraki, Amit K. Roy-Chowdhury, Manmohan Chandraker	<b>CVPR 2022 (Oral)</b>
<b>On Generalizing Beyond Domains in Cross-Domain Continual Learning</b> Christian Simon, Masoud Faraki, Yi-Hsuan Tsai, Xiang Yu, Samuel Schuster, <a href="#">Yumin Suh</a> , Mehrtash Harandi, Manmohan Chandraker	<b>CVPR 2022</b>
<b>Cross-Domain Similarity Learning for Face Recognition in Unseen Domain</b> Masoud Faraki, Xiang Yu, Yi-Hsuan Tsai, <a href="#">Yumin Suh</a> , Manmohan Chandraker	<b>CVPR 2021</b>
<b>Learning to Optimize Domain Specific Normalization for Domain Generalization</b> Seonguk Seo, <a href="#">Yumin Suh</a> , Dongwan Kim, Geeho Kim, Jongwoo Han, Bohyung Han	<b>ECCV 2020</b>
<b>Stochastic Class-based Hard Example Mining for Deep Metric Learning</b> <a href="#">Yumin Suh</a> , Bohyung Han, Wonsik Kim, Kyoung Mu Lee	<b>CVPR 2019</b>
<b>Part-Aligned Bilinear Representations for Person Re-identification</b> <a href="#">Yumin Suh</a> , Jingdong Wang, Siyu Tang, Tao Mei, Kyoung Mu Lee	<b>ECCV 2018</b>
<b>Appearance Dependent Inter-Part Relationship for Human Pose Estimation</b> <a href="#">Yumin Suh</a> and Kyoung Mu Lee	<b>APSIPA 2016</b>
<b>Discrete Tabu Search for Graph Matching</b> Kamil Adamczewski, <a href="#">Yumin Suh</a> , Kyoung Mu Lee	<b>ICCV 2015</b>
<b>Subgraph Matching Using Compactness Prior For Robust Feature Correspondence</b> <a href="#">Yumin Suh</a> , Kamil Adamczewski, Kyoung Mu Lee	<b>CVPR 2015</b>
<b>Graph Matching via Sequential Monte Carlo</b> <a href="#">Yumin Suh</a> , Minsu Cho, Kyoung Mu Lee	<b>ECCV 2012</b>

## Honors and Awards

<b>Business Contribution Award, NEC Laboratories America</b>	<b>2024</b>
• <a href="#">NEC develops the technology to automatically generate explanatory text from video using video recognition AI x LLM, (December 2023)</a>	
<b>Business Contribution Award, NEC Laboratories America</b>	<b>2023</b>
• <a href="#">Aiming to realize human digital twins: Image analysis technology that efficiently senses the real world, (August 2023)</a>	
• <a href="#">NEC develops high-speed, high-precision technology to search for specific persons based on ambiguous appearance attribute information by analyzing camera images (May 2023)</a>	
<b>Outstanding Reviewer, CVPR 2023</b>	<b>2023</b>
<b>Outstanding Reviewer, ICML 2020</b>	<b>2023</b>
<b>3rd Place Award, VisDA-2019</b>	<b>2019</b>
• <i>Visual Domain Adaptation Challenge, TASK-CV Workshop in ICCV 2019</i> with Dongwan Kim, Geeho Kim, Seonguk Seo, Bohyung Han, Taeho Lee, Jongwoo Han, Hyejeong Jeon	
<b>Doctoral Colloquium, KCCV 2019</b>	<b>2019</b>

- Doctoral Colloquium, CVPR 2019** **2019**
- 3rd Place Award, SFMI Machine Learning Challenge 2017** **2017**
- *Challenge on the road sign letter recognition from road view images*, Samsung Fire & Marine Insurance, Korea with Jihong Kang and Sungyong Baik
- Graduated with honors (Summa cum laude)** **2011**

## Invited Talks

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### Elastic AI: Adaptive Solution for Multi-Task AI Challenges

- Korea University Feb 2024

### Elastic AI for multiple tasks

- Company-wide talk May 2022
- [Lomin Inc.](#) February 2022
- Guest lecture in “Moonshot project”, Korea University June 2022

### Multi-task learning and domain generalization

- Guest lecture in Australian National University October 2021

### Learning local matching for person re-identification

- Young Research Highlight, Summer Annual Conference of IEIE June 2021

## Academic Services

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### Area Chair

- CVPR (2025)
- CVPR (2024)
- ACCV (2022)

### Senior Program Committee

- AAAI (2022)
- IJCAI (2021)

### Program Committee

- AAAI (2025)
- ECCV, ICLR, ICML (2024)
- CVPR, ICCV, ICLR, ICML (2023)
- CVPR, ECCV, ICLR, ICML, IJCAI, NeurIPS (2022)
- AAAI, CVPR, ICCV, ICLR, ICML, NeurIPS, WACV (2021)
- AAAI, ACCV, CVPR, ECCV, ICPR, ICML (2020)
- CVPR, ICCV (2019)
- MM (2017)

### Journal Reviewer

- TPAMI, TIP, TMM, TCSVT, CVIU, MMSJ, AOAS

### Student volunteer

- ACCV 2012, MM 2018

## Mentoring

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- [Dohwan Ko](#) (Korea University) 2024
- [Youngmin Oh](#) (Yonsei University) 2023
- [Dongwan Kim](#) (Seoul National University) 2023
- [Abhishek Aich](#) (University of California, Riverside) 2022
- [Dripta Raychaudhuri](#) (University of California, Riverside) 2021
- [Weijian Deng](#) (Australian National University) 2020